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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/147,320	02/02/99	LEIJON	M 9847-0004-6X

MM22/1028  
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EXAMINER

NGUYEN, C

ART UNIT

PAPER NUMBER

2831

DATE MAILED:

10/28/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
09/147,320

Applicant(s)  
Leijon et al.

Examiner  
Chau Nguyen

Group Art Unit  
2831



☒ Responsive to communication(s) filed on Sep 13, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 19-38 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 19-38 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). The citizenship of the second joint inventor and the residence of the seventh joint inventor have been altered without initialing.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor

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and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 19, 22-25, 31-33 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. (4,997,995) in view of Hvizd, Jr. et al.

Simmons et al. discloses an insulated conductor (fig. 2) comprising one or more strands (means for conducting, 1) an inner conductive layer (means for creating a first equipotential surface, semiconductive layer 2), an insulating layer (means for separating, 3), and an outer conductive layer (means for creating a second equipotential surface, semiconductive layer 4) (claims 19, 36-38). Simmons et al. also discloses the insulating layer being a cross-linked polyethylene (col. 2, lines 31-32) (claim 33) which is a low density polyethylene (claim 35).

Simmons et al. does not disclose the outer conductive layer having a resistivity in an inclusive range of 10 through 500 ohm\*cm (claims 19, 36&37) or of 50 through 100 ohm\*cm (claim 22). Hvizd, Jr. et al. discloses an invention related to an insulated high-voltage cables. Hvizd, Jr. et al. discloses that it is well-known in the high voltage cable art that semiconductive material having resistivities in the range of 1 to 1,000,000 ohm\*cm (col. 2, line 65-67). It would have been obvious that depending on the specific use of the resulting wire, one skilled in the art would choose a suitable resistivity for the outer layer of Simmons et al. to meet the specific requirement since a resistivity having ranges of 10 through 500 ohm\*cm or 50 through 100 ohm\*cm are well-known in the cable art for semiconductive material as taught by Hvizd, Jr. et al.

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The resistances as recited in claims 23-25 are inherent from the modified outer layer of Simmons et al. since the modified Simmons et al. outer layer has the resistivity as claimed.

The method limitations, extruded (claim 31) or extrusion through a multilayer head (claim 32), do not contribute to the patentability of the product claims since it has been held that the patentability of a product does not depend on its method of production. In re Thorpe, 777 F2d, 695, 698, 227 USPQ 964, 966. Further, the method limitations above do not cause a structural difference in the product.

Re claims 36-38, Simmons et al. discloses that the insulated wire is used voltages of 400kV. Simmons et al. does not specifically disclose the insulated wire being used for a high-voltage winding in an electric machine or being used in a rotating electrical machine. However, it would have been obvious to one skilled in the art to use the modified insulated wire of Simmons et al. in an electric machine or a rotating electrical machine since the modified insulated wire of Simmons et al. is an extra-high voltage cable which is suitable for being used in high-voltage applications and using an insulated wire in a rotating electrical machine is well-known in the art.

4. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Elton et al.

The modified Simmons et al. insulated wires discloses the invention as claimed including the features of the outer conductive layer (semiconductive material) having a resistivity lower than that of the insulating layer (plastic) but higher than that of a material which comprises the one or

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more strands (metal) (claim 21). The modified Simmons et al. does not disclose the outer conductive layer being grounded at at least two different points. Elton et al. discloses an insulated wire (fig. 7) wherein the outer conductive layer (110) is grounded (at 112). It would have been obvious to one skilled in the art to ground the outer conductive layer of the modified Simmons et al. wire as taught by Elton et al. to establish and maintain the potential of the conductive layer. It would have been obvious to one skilled in the art to provide another grounding point on the outer conductive layer of the modified Simmons et al. wire to improve the grounding effect of the outer layer because it has been held that duplicating an essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Breitenbach et al. and Silver et al.

Claim 26 additionally recites the outer conductive layer comprising a base polymer and a carbon black. Breitenbach et al. discloses a cable comprising an outer conductive layer (9) including a base polymer and a carbon black. It would have been obvious to one skilled in the art to use the material as taught by Breitenbach et al. for the outer conductive layer (4) of Simmons et al. since a mixture of a polymer and a carbon black is well-known in the art for being used as a (semi)conductive material.

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Claim 26 additionally recites the resistivity of the outer conductive layer being set by a type of the base polymer, a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the outer conductive layer. Silver et al. discloses an insulated wire comprising a conductive layer (3 or 4) being made of a base polymer and a carbon black. Silver et al. discloses the resistivity of the layer being set by a type of the base polymer (col. 4, lines 35-39), a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the layer (col. 1, lines 20-37). It would have been obvious to one skilled in the art to choose suitable types of polymer and carbon black and use an appropriate amount of the carbon black as taught by Silver et al. to meet the specific required resistivity of the modified Simmons et al. outer layer.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al., Breitenbach et al. and Silver et al. as applied to claim 26 above, and further in view of Cloetens et al.

Claim 27 additionally recites the base polymer comprising an ethylene butyl acrylate copolymer. Cloetens et al. discloses an invention related to an electrical insulating composition comprising ethylene butyl acrylate as a base polymer (col. 3, line 43). It would have been obvious to one skilled in the art to use ethylene butyl acrylate as the base polymer of the modified Simmons et al. since ethylene butyl acrylate is a well-known electrical insulating polymer as taught by Cloetens et al.

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7. Claim 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al. as applied to claim 25 above, and further in view of Yamanouchi et al.

Claim 28 additionally recites the outer conductive layer being cross-linked by peroxide. Yamanouchi et al. discloses an invention related to a XLPE insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to cross-link the outer conductive layer of the modified Simmons et al. cable by using peroxide as a cross-linking agent since it is known in the art that to cross-link a material is to increase strength, heat- and electrical resistance of the material and peroxide has a relatively high cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23).

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al., Breitenbach et al. and Silver et al. as applied to claim 26 above, and further in view of Yamanouchi et al.

Claim 29 additionally recites the outer conductive layer being cross-linked by peroxide. Yamanouchi et al. discloses an invention related to a XLPE insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to cross-link the outer conductive layer of the modified Simmons et al. cable by using peroxide as a cross-linking agent since it is known in the art that to cross-link a material is to increase strength, heat- and electrical resistance of the material and peroxide has a relatively high



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cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23).

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Olsson et al.

The modified Simmons et al. wire does not disclose an adhesion between the insulating layer and the outer conductive layer. Olsson et al. discloses an insulated wire wherein the insulating layer (3) is strongly bonded (adhered) to the outer conductive layer (4). It would have been obvious to one skilled in the art to provide a strong bond between the insulating layer and the outer conductive layer in the modified Simmons et al. wire to eliminate the risk of corona occurrence as taught by Olsson et al. (col. 3, lines 30-33).

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Breitenbach et al.

Claim 34 additionally recites the insulating layer being made of EPR. Breitenbach et al. discloses a cable comprising an insulating layer (8) being made of EPR. It would have been obvious to one skilled in the art to use EPR for the insulating layer of the modified Simmons et al. cable since EPR is an insulating material suitable for being used in high voltage applications as taught by Breitenbach et al.

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*Response to Arguments*

11. Applicant's arguments with respect to claims 19, 36-38 have been considered but are moot in view of the new ground(s) of rejection.

*Communication*

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau Nguyen whose telephone number is (703) 308-0693.

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October 18, 1999